

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

REMARKS

Claims 1-27 were presented for examination. Claims 1, 2, 13, 18, 20 and 21 have been amended herein. No new matter has been added. The following comments address all stated grounds for rejection, and place the presently pending claims, as identified above, in condition for allowance.

I. Interview with the Examiner

Applicants' representative thanks the Examiner for the courtesies extended during the telephone interview conducted on July 19, 2007. During the interview the Examiner indicated that the application presented different features compared to the Braudaway reference. However, the Examiner further indicated that the claims needed to be amended to clearly identify the differences. Applicants present above amendments in response to the Examiner's request. Applicants believe that the amended claims are patentable and in condition for allowance.

II. Claims Rejected Under 35 U.S.C. § 102(b)

Claims 1-3, 8-9, 12-14 and 17-23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,502,458 (Braudaway). Claims 1, 13, 18 and 20 are independent claims. Claims 2-3, 8-9 and 12 depend on claim 1. Claims 14 and 17 depend on claim 13. Claim 19 depends on claim 18. Claims 21-23 depend on claim 20. Applicant respectfully traverses this rejection.

A. Claims 1-3, 8-9 and 12

Claim 1 as amended recites:

“providing input color data for a group of pixels in an input color space, wherein one or more pixels contain input color data that is repeated;

building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table;

storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data;

building an intermediate palette for storing the input color data corresponding to the indices, wherein each input color data appears once in the intermediate palette;

converting the input color data in the intermediate palette to an output color data in an output color space, wherein the same input color data in different pixels is converted once to

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

avoid repeated conversion calculations for the different pixels having the same input color data;
and

for each pixel in the group of pixels substituting the corresponding converted output color data for each input color data."

Braudaway does not disclose these claim elements.

Braudaway concerns a process which defines a display-independent standard normalized palette table with reference to a standard display. The process indicates determining a matrix of transformation that will transform the desired pixel colors represented as CIE XYZ tristimulus values into RGB tristimulus values, measuring the XYZ* values, computing RGB* values that correspond to the measured XYZ* values and building a display-independent normalized palette table containing the RGB* values of the palette entries. Braudaway discusses replacing each pixel of the desired image with the palette entry of the closest matching color in the display-independent normalized palette table, (Col. 3, lines 12-29).

In contrast, the present application discusses providing input color data for a group of pixels in an input color space, with one or more pixels containing input color data that is repeated. In order to prevent repeated conversions of the same input color data, the present application builds an intermediate table for storing the input color data, with each different input color data assigned an index in the intermediate table. After assigning an index to each different input color data, the indices are stored in an index array, with each index stored at a position corresponding to a position in the input color data. The size of the index array is equal to the size of the initial group of pixels containing the input data, so that a correct match between the input color data and the converted data can be made after conversion. By building an intermediate palette for storing the input color data corresponding to the indices, with each input color data appearing once in the intermediate palette, the present invention creates a palette of unique entries to prevent repeated conversion of the same color data. The input color data in the intermediate palette is then converted to an output color data in an output color space, with the same input color data in different pixels converted once to avoid repeated conversion calculations for the different pixels having the same input color data. Finally, for each pixel in the group of pixels, the corresponding converted output color data is substituted for each input color data.

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

Braudaway does not disclose "building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table" and "storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data," as required by Applicant's claims. The display-independent matrix of Braudaway is a transformation matrix that converts colors expressed in XYZ values to the RGB values, (Braudaway, Col. 5, lines 4-6). The transformation matrix does not "store the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data" as required by Applicant's claim 1. For example, if the tenth RGB pixel in the input color data with the coordinates (50, 50, 0) gets assigned an index of 116, the RGB value (50, 50, 0) will be stored in the intermediate table along with an index value of 116. The tenth entry in the index array is registered as 116. In the intermediate palette, the RGB value (50, 50, 0) is stored at index 116, (Detailed Description, [0026]).

Furthermore, Braudaway indicates that each pixel of the desired image is replaced by the palette entry of *the closest matching color* in the display-independent normalized palette table, (Col. 5, lines 53-57). In contrast, claim 1 recites "for each pixel in the group of pixels substituting the *corresponding converted output color data* for each input color data." Hence, each output color data corresponds to a single input color data. Applicant's claim 1 indicates converting every different color of the input data. As such, the present invention does not use the closest matching colors, but the output color data is a direct conversion from the input color data.

For at least these reasons, Applicant respectfully submits that Braudaway does not disclose all of the patentable features of claim 1. Claims 2-3, 8-9 and 12 depend on claim 1, and therefore incorporate all of the patentable features of claim 1. Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 1-3, 8-9 and 12 under 35 U.S.C. § 102(b).

B. Claims 13, 14 and 17-23

Independent claims 13, 18 and 20 recite similar elements to those recited in claim 1. Claims 14 and 17 depend on claim 13. Claim 19 depends on claim 18. Claims 21-23 depend on claim 20. Dependent claims incorporate each and every element of the independent claims upon

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

which they depend. In light of the arguments presented above, Braudaway does not disclose all of the patentable features of claims 13, 18 and 20. Specifically, Braudaway does not disclose storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data, as required by claims 13 and 20. Braudaway does not disclose a storage facility for storing an index array, the index array storing the indices, wherein each index is stored at a position corresponding to a position in the input color data, as required by claim 18. Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 13, 14 and 17-23 under 35 U.S.C. § 102(b).

III. Claims Rejected Under 35 U.S.C. § 103(a)

A. Claims 4-5, 10-11, 16 and 24-25

Claims 4-5, 10-11, 16 and 24-25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Braudaway in view of U.S. Patent No. 5,579,031 (Liang). Applicant respectfully traverses this rejection.

In light of foregoing arguments, Braudaway does not teach or suggest building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table and storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data, as required by claims 1, 13 and 20. Liang fails at curing the shortcoming of Braudaway with respect to at least these claim elements.

Liang discusses a process for producing two matched color displays of a digital image using two different display devices. Liang uses an adaptor to convert the digital information representing the image to digital information such that the displayed image as a result of this converted digital information on one of the devices, appears the same as the image displayed on the other. However, Liang, alone or in combination with Braudaway does not teach or suggest building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table and storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data, as required by claims 1, 13 and 20. Claims 4-5 and 10-11 depend on claim 1, and therefore

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

incorporate all of the patentable features of claim 1. Claim 16 depends on claim 13, and therefore incorporates all of the patentable features of claim 13. Claims 24-25 depend on claim 20, and therefore incorporate all of the patentable features of claim 20. Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 4-5, 10-11, 16 and 24-25 under 35 U.S.C. § 103(a).

B. Claims 6-7, 15 and 26-27

Claims 6-7, 15 and 26-27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Braudaway in view of U.S. Patent No. 5,668,890 (Winkelman). Applicant respectfully traverses this rejection.

As noted above, Braudaway does not teach or suggest building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table and storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data, as required by claims 1, 13 and 20. Winkelman fails at curing the shortcoming of Braudaway with respect to at least these claim elements.

Winkelman discusses a method for analyzing an image. Winkelman indicates that the image values of a first color space that are allocated to the input apparatus are transformed into image values of a second color space that is independent of the first color space. Winkelman further indicates that the analysis of the image is implemented on the basis of the transformed image values of the second color space. However, Winkelman, alone or in combination with Braudaway does not teach or suggest building an intermediate table for storing the input color data, wherein each different input color data is assigned an index in the intermediate table and storing the indices in an index array, wherein each index is stored at a position corresponding to a position in the input color data, as required by claims 1, 13 and 20. Claims 6-7 depend on claim 1, and therefore incorporate all of the patentable features of claim 1. Claim 15 depends on claim 13, and therefore incorporates all of the patentable features of claim 13. Claims 26-27 depend on claim 20, and therefore incorporate all of the patentable features of claim 20. Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 6-7, 15 and 26-27 under 35 U.S.C. § 103(a).

Application No.: 10/000,461

Docket No.: OAQ-013RCE2

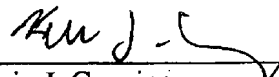
CONCLUSION

In view of the above amendments and comments, Applicants believe the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. OAQ-013RCE. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: October 5, 2007

Respectfully submitted,

By 
Kevin J. Canning
Registration No.: 35,470
LAHIVE & COCKFIELD, LLP
One Post Office Square
Boston, Massachusetts 02109-2127
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant